



IFWO

RAW SEQUENCE LISTING

DATE: 08/20/2004

PATENT APPLICATION: US/10/767,441

TIME: 14:51:14

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

4 <110> APPLICANT: Lawrence, Mark L.
 5 Liu, Dongyou
 6 Ainsworth, A. Jerald
 7 Austin, Frank W.
 9 <120> TITLE OF INVENTION: Use of Novel Virulence-Specific Genes as Targets for
 Diagnosis
 10 and Potential Control of Virulent Strains of Listeria Monocytogenes
 12 <130> FILE REFERENCE: 2343-179-27
 14 <140> CURRENT APPLICATION NUMBER: US 10/767,441
 15 <141> CURRENT FILING DATE: 2004-01-30
 17 <150> PRIOR APPLICATION NUMBER: US 60/444,201
 18 <151> PRIOR FILING DATE: 2003-02-03
 20 <150> PRIOR APPLICATION NUMBER: US 60/447,297
 21 <151> PRIOR FILING DATE: 2003-02-14
 23 <150> PRIOR APPLICATION NUMBER: US 60/458,414
 24 <151> PRIOR FILING DATE: 2003-03-31
 26 <160> NUMBER OF SEQ ID NOS: 33
 28 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 30 <210> SEQ ID NO: 1
 31 <211> LENGTH: 949
 32 <212> TYPE: DNA
 33 <213> ORGANISM: Listeria monocytogenes
 35 <400> SEQUENCE: 1
 36 ataggagacg atttaaattg ttgcgtatgg tgagttaatt cgcgaaagtac ggcttttcaaa 60
 37 aggactaacg caaaaagaag tttatacagg agtaatttca aaatcatatg caatagggttt 120
 38 tgaaaaagga aaacatgata ttacattagt actatttgaa gaaatttttag aacgggtcat 180
 39 gttaagtcca gatgaatttt tctttatgaa taggggctat tcttttagcgg aggaagataa 240
 40 tttttggtac aaatttgcaa atgcagctaa tcaaaaaagt ttggcagaat tacaagaatt 300
 41 ataccaagaa gtattgcagc aaaatggcga tagagcgaat ctaaggaaag caattgtcca 360
 42 ctcgagaatt gaaattaatg aacaatttct tttgaataat cgatttgacg ttagtatcgt 420
 43 ttctgaggaa gataaagcag ttatccaaac gtatttgggg aaagttcaat catggacact 480
 44 agaagaaatt cggatttttcg ctaattcagt ggactatttt gaagaagatg tacaaattta 540
 45 tttttttcaa ttggtcttga agtcactcga aaaatataag cattacgatc gtggtaaaaa 600
 46 agtatttttc acgctactca ccaacataat agaagaacta atcacccgtg atcaattaga 660
 47 atatgccgcg caattattag aaatactgca cgaactttct tctacgcgtg actgtgcttt 720
 48 ttaccggatt atgcataatt actatcaagg cttaatatgg atgaaaaatg acgaggtcga 780
 49 acaaggctta aaagagtcta aaagtgaat ccgaatttta gatgcacttg attacaaatc 840
 50 cctcgcgcta ctttataata cattacttca acagttttta gaaaaagaga atatacaaat 900
 51 agtttaaagt aaatcagata ccttttataa ggtatctgtt tttttggtc 949
 53 <210> SEQ ID NO: 2
 54 <211> LENGTH: 1470
 55 <212> TYPE: DNA
 56 <213> ORGANISM: Listeria monocytogenes
 58 <400> SEQUENCE: 2

(pg.6)

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/767,441

DATE: 08/20/2004

TIME: 14:51:14

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

```

59 tggagataaa aaaggatgct tactaaaata gctacttatg gttgttgtgc aacaagggat 60
60 ttgttcaata aagcatttgt tagtgattgg aaaaatcatt ttcaattagt gtcatatcaa 120
61 cagcattgca gtattgtttc actaatgtca aagccaattg atatcgaact aggagaagaa 180
62 ctgctgggag agttaagtaa ctttgaaaaa agtgtattta aacaagacgt attaaaatct 240
63 tttttagaaa ctttaaaaaa aactcaacca gaatatttag tgtttagattt tcatgtggat 300
64 acattcaatg gttttattga actcactgat ggggggatta tcactaatcg aatcgccgc 360
65 tataagaaat tggatatttt taataaaatg gaagcaagga aagttttttc gccgttagaa 420
66 aatacgaactg agtttagaaa acgttggata cagagtttta accgttttat gcaatttatg 480
67 aaagaaaatt gccctaatac ccaaattatc attaataggt tagaggttgc acgaatgtat 540
68 tattctttag ataaccaaata ggaaagcatg atagaacgta gaaaaacaaa agatcaccat 600
69 actgctgaga cattagctaa aattgatgag tgcatagatt actttgagcg ttatgctatg 660
70 aataattttg atttacagtc attggacttt aattccgaag aatactttgg tgcagaaaaa 720
71 aatccatggg gaacctgtta tatgcattac aatccctatt attataaaaa aaagttttaa 780
72 gatttatgga atatagttga aaatcatttt catgcacca caaaattagc tagttttgca 840
73 cctggaggcc ttgcgaaaca aattccatta ggtgtgacca aattatctga tatggatgaa 900
74 gtaggagtat attatttaac aaatgctact tacttacaaa tggaggatcg accgacaaca 960
75 gataatgcag gttatttttt cattgtttat ccgcgaaatg ggaaaaatgg gtatatgcaa 1020
76 gagctgagaa aatcaacagc agctttttcc attcaaattt ttgtccgaat tactgatgga 1080
77 aaagagagtt ctaaattgaa catggttaaat agtggctttc gaacacttac aatacctgat 1140
78 gtgacttcta tttctgaaat tacagaggct ggagaatatt atattactgc agaacagggt 1200
79 aagaaacttc aggatcatcc tacaagaaa aatggttggg ttctaaccgt ttctaagaaa 1260
80 aatcatgata gcctaaaaa attgttaaca aaaaatactc aaaaagacaa tgcctttgaa 1320
81 gaatatgttc gacttgtaaa cgtggaaaaa agaacaaact taaaatggcg taaatatcat 1380
82 tttgatgaag caaacttttc gattatagtt gctatacgta actttaaaaa caaagtggta 1440
83 cgaagattaa aattaacaaa agcataaaca 1470

```

85 <210> SEQ ID NO: 3

86 <211> LENGTH: 730

87 <212> TYPE: DNA

88 <213> ORGANISM: *Listeria monocytogenes*

90 <400> SEQUENCE: 3

```

91 aggagagatt tttatattaa atcaaaaaata tcaattacta cttcataatg aatatgacac 60
92 aaaaagtggg gatttagtca aaaaagaaat agttgcaact aaaaaaacta aaaatctctt 120
93 ggaagatcta acttcgcatt tgttatgtgt tacaaatcaa atagagtatg gaaaatttat 180
94 cacttggtat gaaatggaaa ttaaaaaagt tctacaagt catcccaatc agcactttat 240
95 tattaaaaat tcctttcaac aattatattt tcgggaaaca atgctgttgc ttgagaattt 300
96 acagaaagat agccggcgac taacgattga gctagttgga gatagtcaga ttagccctta 360
97 ttcaaaggaa cttttttccg cagaggacag tgatgctttt ttgaaaggga agttaaaaaa 420
98 gttgaaaaag tggcattatt ttatttcaaa gcatattgaa agtggtgcca tcgaacaaac 480
99 actgattttt acgccctata ttgatgaatt gaaatatagt ttaacgcaa agtcgaagct 540
100 cttacacaaat attactgaat taaagttttt tctatcattt tggaaaaatt gggctgagct 600
101 tcgatttggt gatttttttag ttttagtaga tgaaaaaac gaatttgat cgcattgtgt 660
102 tttaccagat gaattaaatg tacgttgcaa aatgtatgag aactttggag gaatggtcag 720
103 tgagtaaaaa 730

```

105 <210> SEQ ID NO: 4

106 <211> LENGTH: 810

107 <212> TYPE: DNA

108 <213> ORGANISM: *Listeria monocytogenes*

110 <400> SEQUENCE: 4

```

111 aaaaactggt ctaaaaagga gggggaacga tgaaaacgaa gatgccggaa atgctttctt 60

```

RAW SEQUENCE LISTING

DATE: 08/20/2004

PATENT APPLICATION: US/10/767,441

TIME: 14:51:14

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

```

112 tcatttcaga agaagctggt agtagaaaaa tgacaagtga ggaaattgct gctcactttg 120
113 gttatgataa acatcacttt agtcgaaaat ttaaagaaat taatggattc agtgtggttg 180
114 aattttctttc tagtttaaaa gtggaaaagg cgattattga acttgatgaa gaagtacgca 240
115 tactcgactt acaagaacat tcaggttttg aaagtagtgg tagtttcaca aatacgttta 300
116 aaaaatatac aggtagttct cctagaaaat acaaaaccga aatgaatgat attttttatg 360
117 atatgaaacg ttttgaaaat gataataagg ataagtcaat agcgcatttt caagaaaata 420
118 atgattcttt ttgcaatgta actattgatg tacttgatga atttgagaag ggtatcatat 480
119 ttattggact tttccgtact cttataccga atcatatgcc tatatcggga ttagctacta 540
120 aaaatttaat aggaaatcaa ttgaaaaata ttccaagcgg agactattat ttattagctt 600
121 gtgcgataag ccagtctaata aacattctat cttattttta cttaagtaat agtttgagag 660
122 ggaaagaaga tgaaaagcta tcttttctta aatgttctgg caatcattac gcgattaagc 720
123 tgagaaaacc aataccagaa gateccacaa tattagctaa tgtgggaaaa attttaatat 780
124 cctgtttgaa gaacacaatc tagaacaatt                                     810

```

126 <210> SEQ ID NO: 5

127 <211> LENGTH: 960

128 <212> TYPE: DNA

129 <213> ORGANISM: *Listeria monocytogenes*

131 <400> SEQUENCE: 5

```

132 aaacaaattc attaatcatt ttaagcacct ccatatcatt agtttaacaa agcattttacg 60
133 tttttcattg tatatttgcg acattttgca gaaaaatttg cttcatttct tctgggggtat 120
134 gattactata tcgtttaaat tgtttaatta agtgagcctg gtccgtaaac ccatgaagat 180
135 aagcaagttc agcgcgccggc acacttggat tctcatataa tgccgtgaat actttttgga 240
136 aacgaataag ttttgctgtc tgtttagggtg caagtcccat gtgtttttga aacagccgtt 300
137 ctaactgccg aacagatata gctcctaaca caaattgatt ggggttttgt agtaacttat 360
138 caatactgtt taaaaaatca ggatggactt gcttgccaag catcattaat tttcgcagta 420
139 aaaattcttc taataaagct attctttcac tgttcgtcgt catttcagca aacctctctt 480
140 gaaaaaacga aacaaatcca gcaaacatct cttccggctc ttttaccoga ttcattgctac 540
141 cagtcgaagc ctgttcgaca aataaaaaata acgaccacgc ataaaaatcg acggcaaaaa 600
142 gctcgggtatt actttcatcg tcagactcaa acgatgcac actaacgcca acaaatatag 660
143 catccgtcac tagccctgtt ttactatcaa ttgtaaaaat aatatccgca cataaatcag 720
144 gaaccactaa attatttccc gggaaattct tatcatctgc ctcccaaaaa cagcgaatat 780
145 agcctgtaag agctgcactc ggtagatatt ctttatagcc agcacgcttt ggtgtagcta 840
146 caatgggata aaacgtttct agcttagcca taaagagacc cccttttctt catagtacca 900
147 caaaattttc tctttaatca tgcttctttc ttttatttat gggtattaag taaataaggg 960

```

150 <210> SEQ ID NO: 6

151 <211> LENGTH: 390

152 <212> TYPE: DNA

153 <213> ORGANISM: *Listeria monocytogenes*

155 <400> SEQUENCE: 6

```

156 ggagtacacc cgatagcaag gaggaactag atgtatatta aagattttgc cactaaaacg 60
157 gggcttttcga ttgatacgtc tcgatattat gaggaagaaa aattattaat acctgctaga 120
158 aatgaaaaaa attatcgtgt ttatacggaa gaagattact gctgggtaca gcttttactt 180
159 aaaatgaagc aaacagagat gacaataaca aacattaaaa attttgctac attacaaaag 240
160 caaggagata aaacactccc aaatcggata caaattttag ataatcatat ggaaaacttg 300
161 tatgaacaac agaaagattt agcagaaacg atttcttttg tggctaaaaa agtggatggg 360
162 tatcgagaga agttataaaa acaacaggaa                                     390

```

164 <210> SEQ ID NO: 7

165 <211> LENGTH: 4470

166 <212> TYPE: DNA

RAW SEQUENCE LISTING

DATE: 08/20/2004

PATENT APPLICATION: US/10/767,441

TIME: 14:51:14

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

167 <213> ORGANISM: *Listeria monocytogenes*

169 <400> SEQUENCE: 7

```

170 aagtccttgaa aaagaaatTT agtatagtta ttatcagtggt attgttactt gggtattttag 60
171 cgccttttga tactttgtta gtaggtgcag atgaaacaac ggtttctgaa gatacagcag 120
172 ttaaaacggc agaagcagat agtgctactg aaggcataga aagcgaaaca gggttcagatg 180
173 atgaaacggc agaagagcca aaagaagcaa aagaggcaga agcaagcaaa gaaacgacag 240
174 aaaaagagga aaaagcgaaa acggaagaac cggcttctaa tattaanaacg gagattaata 300
175 cagataaaaag ccagctgaaa caaactagct taaaagcagc ggtgccagca ggaagtacat 360
176 ataattcctt gtttccagac gacaatcttg ctaaaaaatt agctgtgatt atcacaggaa 420
177 atgcggctgc aacaggtaat gaatcagtggt atagtgcagc tcttttagca ataagccaac 480
178 ttgatttgag tggggaaacg ggcaatgacc caacggatat ttccaatatt gaaggattac 540
179 aatattttaga gaatttaaca agcctgaatt taagttagaa taatatatcc gacttggctc 600
180 cacttaaaga tttggtaaac ctggtttcac ttaacctttc ttccaatcga acattagtaa 660
181 atctttcagg ggtggaggat ttagttaatt tgcaagaact taatgtctct gcaataaagg 720
182 cgttagaaga tatttcacaa gttgcactgt tgccagtggt aaaagaaatt agcgcgcaag 780
183 gctgtaatat taaaaccttg gaattaaaga atccggctgg tgctgttttg ccagaactag 840
184 aacattttaa tttgcaagaa aatgatttaa ccaacttaac ttcattagcg aaacttccaa 900
185 aattaaaaaa tctctatatt aaagggaaatg cttcttttaa aagtttagag acattgaacg 960
186 gggcgacgaa gctccaattg attgatgcga gtaactgtac cgatttagaa acgcttgag 1020
187 atattagcgg gctttcgga ctcgaaatga ttcaattaag tgggtgtagt aaactgaaag 1080
188 aatcacaaag cttgaagaac ttgcctaate tgggtgaatat tacggcggat agctgtgcaa 1140
189 ttgaagattt aggaacactg aataatttac caaaattaca gacattagtt ctttcagaca 1200
190 atgaaaattt aaccaatatt actgcaatta ccgatttacc acaattaaaa acattaactt 1260
191 tggatggctg tggaaattaca tctattggaa cgcttgataa ccttcctaaa ttagaaaaat 1320
192 tagatcttaa ggaaaatcaa ataactagta taagtgaat aaccgactta ccgcgattaa 1380
193 gctattttaga tgtaagtgt aataatctta caaccatagg ggacttgaaa aaattacctc 1440
194 tattagaatg gctgaatgtt agttcgaata gattatcaga tgtgagtaca ctaacaaatt 1500
195 tcccgagttt aaattatatt aatatatcaa ataattgcat tagaacagtc ggtaaaatga 1560
196 ctgaattacc ttcgcttaag gaattttacg tcaaaaataa cagtatatca gatatttoga 1620
197 tgattcacga tatgcgaat ttaagaaaag ctgtagcgag taacaacctt attacaaata 1680
198 taggtacctt tgataattta ccaaaattgc aaagtctaga tgtgcattca aatagaatta 1740
199 caagtacatc agttatacat gatttaccaa gcttgagac gtttaatgcy caaactaatt 1800
200 tgattaccaa tattggtagc atggataatt taccagattt aacctacgta aacttatctt 1860
201 tcaacagaat accgtcgctt gctccaattg gtgacctacc caatttagaa acattaatag 1920
202 tatcagataa taattcttat ttaagaagcc taggaacgat ggacgggtgt cctaaactga 1980
203 gaattttaga tttacaaaac aattacctta attacactgg aacagaagga aacctagtt 2040
204 cattaagtga tttacaaaat ctaacggaat taaatttgcy aaataatgtt tatattgatg 2100
205 atataagtgg actttccacg ctatcaagac tgatctactt gaatttagat tccaataaaa 2160
206 ttgaagatat ttctgcattg tctaatttaa cgaatcttca agagttaaca cttgaaaaca 2220
207 acaagattga aaacatttca gcacttagtg atttggaana tttaaacaag ctagtgtgat 2280
208 caaaaaataa aattattgat attagtcctg tcgctaatat ggtaatcga ggggcaattg 2340
209 taactgcgag taatcaaaca tatacattgc caactgtatt atcatatcaa agctcgttta 2400
210 ccatagataa tccggttatt tggtagacg gcacactact agcgcctatc tccataggaa 2460
211 actctggtta ttacaaggac gggaaaataa ctggactaa tatgaccgct acgtctagtt 2520
212 ccactttatt taactttaat aggttaaaag acggtttaac cttctcagga acagtcaccc 2580
213 aaccttataa atctgcagcc aaagtaactg cagatgcaga gcaacttat acaattggtg 2640
214 atactatttc agaggagcag tttttaaaag atgttaatgc aaaatcatca gacggggcac 2700
215 ctgttacaag tgattttgct acagtgggtg atttaaacac ttttggcgaa tatgaagtta 2760
216 ctttaacttc cgaaaaagat ggaatccaag gggtagttg caaagtaatt gtcaaagttc 2820

```

RAW SEQUENCE LISTING

DATE: 08/20/2004

PATENT APPLICATION: US/10/767,441

TIME: 14:51:14

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

```

217 ttcacggagc gacctgtcatt tcggcagacc aaacaattag ttatgataaa catgcaacta 2880
218 ttacagagaa acaatttttta gaagatattc atgccagcac agacttggat acagctatta 2940
219 caaccaatth tagtacagca gttaacttga ataaaggcgg agattataca gttgcactaa 3000
220 actctgaaaa tgaggacggc gtgaaagctg aaacggttta tgtcactgtt actgtaaaata 3060
221 aagaccagc gccgattata agtgctaaga cagaaatcac gtatgataaa ttctcgaaaa 3120
222 aaaccgaagc ggcgttctta gatgatatac acgcagatac aaatgatggc tctatagtaa 3180
223 cttctaattt tgctacagca gttaatttag ataaagctgg tgattatact gttacactga 3240
224 attctattaa tagtgatggt gtagcgggca cgccaacagc gattattgtg catgtggaga 3300
225 aagagaaaat agcaacaatt agcacaataa cggcacaaca atatgaaaaa tatgcaaga 3360
226 ttaatgaaac gcaattttcta aaagatgttc atgctagtag taacgcgagc ccaacaaccg 3420
227 cagttttgga aagtgatttt gaaacagtag ttaactaga cgtcccagga acgtacacag 3480
228 taacgattac tgctacaaat gaagatggcg gagtatcggc acctaaagaa gtttctgtca 3540
229 tagtaaggaa aattccagca ccagagatca ctgcagataa ggaaataact tatccgaaat 3600
230 ttgatgaagt aagtgaagca gaatttttaa atgatattca tgcaactatt agtgacaaaa 3660
231 atgtagcgat tacaagtaac ttcagcacag atgtgaattt aaataaagct ggcgattaca 3720
232 cagtaacatt aaatgctacg aatgaagacg gcgtaaaggc tacaccgggt gaagtaattg 3780
233 tacatgttca acaaggagaa cgccctgtta taacagccga tgcaactatt tcctatgaca 3840
234 agttcgctaa cataacggaa gcgaagttct tagaagatat tcatgcaaca agtagtgatg 3900
235 gtcaaagctc tactgtaatc acctctaatt tccagaccgc gacaaacttc aaaacagcca 3960
236 tgagctacac agttacgctt aatgctgtta atgaagacgg cattagcgca gaaccagtag 4020
237 cagtgaccgt tacaataaat aaagaaccag ccgcggcggt aaaagctgat gcagaagtaa 4080
238 gctatgcgaa aaatgaagct gtaaccgaat ccgatttctt caaagatgtt catttagaag 4140
239 gaacggaagc gccaaagtaca gccaaagcaa caagtaattt tgattccgta gtagatagaa 4200
240 gtaaaacagg agattatact gttacgataa atgctacaaa cgaagatggg gctgtttcta 4260
241 caccaattga agtaattgtt catattgaag cagaaagtgc accagtaatt acagcgaatg 4320
242 cagaagtaaa atataacaaa catgaacaaa cagacgaaag aagattttta tatgatagtg 4380
243 aagcaaaaat cgatgaagct aatgtggaaa ttaaaaccga ttttgcagaa aaagtagata 4440
244 ttaataaagt tggaacttat actgtcacac , 4470
246 <210> SEQ ID NO: 8
247 <211> LENGTH: 1190
248 <212> TYPE: DNA
249 <213> ORGANISM: Listeria monocytogenes
251 <400> SEQUENCE: 8
252 gaaaggactg aatacattga gaaaagtttt aatgttttta agcacagctt tattattagc 60
253 cattctgtca ctaagcttta ctggtttaga tctgaaggca aaagctgctt ctgatttata 120
254 tccactacct gctccaatta ttgatgtttt ccagatgat ggattagcca aagatatggc 180
255 taaaaactta aacaaagact ctgtgaatga tgttattgac caagatgact tggatgcatt 240
256 aactggtttg ggatttgaaa caagtacgat tacgaatgat tccatgcaat tactagaacg 300
257 tgccatgttt aacaatgtca cagatgtaag tattatggaa tttggggcta aactaacgga 360
258 gttccctgat attacaacca tcccacattt aaaaacgtta ttttttgctg atccacctgg 420
259 aagattaact agaaacttgt ccttccaaa ctaccaaatt taccctgaaa tggataccat 480
260 tacaatgagc ggaaataatt taatcggttc tatccctgat ttcactggaa tgctgtctt 540
261 aaaacagctg tatattgtctg aaatgttaat tacaagcga gaacttcta attttaataa 600
262 tattccttta cttattacgt tggatctaag ttctaacca ttgacaacta ttcctgattt 660
263 tcaaaatata ccaaatctca catttttaga tttaaatgca aatttattaa ccaatacacc 720
264 tgattttcaa aatttaccta aattaactga tttaaattta agacataaca atttaactgg 780
265 tacgatggtt aactacacca acttacctag tttagaatcc ttaaacttag attacaattt 840
266 tttactgaa ctaccgtcta atgtattaga taccatctat gttcaaagtc aaaacggaga 900
267 gcttctctgat caaactatta atcagggcga tacctgtact attgatttac ctatttattt 960

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/767,441

DATE: 08/20/2004
TIME: 14:51:15

Input Set : A:\2343-179-27.ST25.txt
Output Set: N:\CRF4\08202004\J767441.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:33; N Pos. 610

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/767,441

DATE: 08/20/2004

TIME: 14:51:15

Input Set : A:\2343-179-27.ST25.txt

Output Set: N:\CRF4\08202004\J767441.raw

L:670 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:600